



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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In re Application of  
**Carlsson et al.**

Serial No.: **09/751,250**

Filed: **December 29, 2000**

For: **Delivery of Broadcast Teleservice  
Messages Over Packet Data Networks**

Attorney's Docket No: **4015-665**

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**APPEAL BRIEF**

Dear Sir or Madam:

This Appeal Brief is being submitted within two months of the Office having received the Notice of Appeal (December 1, 2005). A check in the amount of \$500 is enclosed to cover the requisite fee pursuant to 37 C.F.R. §41.20. If there are any additional fees or dues required for entry of this Brief, the Commissioner is authorized to charge them to Deposit Account No. 18-1167.

**(I.) REAL PARTY IN INTEREST**

The real party in interest is Ericsson Inc., the assignee of the present invention.

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## **(II.) RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences to the best of Applicants' knowledge.

## **(III.) STATUS OF CLAIMS**

A total of twenty-three (23) claims numbered 1-23 have been presented for examination, all of which remain pending. Claims 14-15 are allowed. Claims 2 and 12 are objected to as being dependent on a rejected base claim, but would be allowed if rewritten to include all the limitations of the rejected base claim and any intervening claims. Claims 1, 3-11, 13, and 16-23 stand finally rejected. Accordingly, Applicants appeal the final rejection of claim 1, 3-11, 13, and 16-23.

## **(IV.) STATUS OF AMENDMENTS**

All amendments have been entered to the best of Applicants' knowledge.

## **(V.) SUMMARY OF CLAIMED SUBJECT MATTER**

Some conventional communication networks typically include both a circuit-switched network and a packet-switched network. Dual mode mobile terminals (e.g., Class B mobile terminals) may connect to both types of networks to conduct voice and packet data communications. Typically, a mobile terminal registers with the packet-switched network for packet services, and camps on a Packet Common Control Channel (PCCCH). While camped on the PCCCH, the mobile terminal may also register with the circuit-switched network for voice services. Because the mobile terminal is camped on the PCCCH, however, registration with the circuit-switched network is accomplished using a tunneled connection between the packet-switched network and the circuit-switched network. Once registration is complete, the mobile terminal camps on the PCCCH to monitor the paging channel. Paging messages originating in the circuit-switched network are tunneled via the PCCCH for delivery to the mobile terminal. *Spec.*, p. 3, ln. 15 – p. 4, ln. 2.; *see also Spec.*, p. 15, ll. 18-22.

In these conventional networks, broadcast teleservice messages, which are point-to-multipoint messages, are provided to mobile terminals over a Broadcast Control Channel (BCCH) in the circuit-switched network. The BCCH is a channel included in the circuit-switched network's Digital Control Channel (DCCH). These services, however, are not available to mobile terminals over the PCCCH. Therefore, when a mobile terminal camps on the PCCCH, it is unable to receive broadcast teleservice messages. *Spec.*, p. 4, ll. 3-6.

Accordingly, Applicant's invention provides a method that allows a dual mode mobile station to receive broadcast teleservice messages originating from a Broadcast Message Center (BMC) in the circuit-switched network while camping on a control channel of a packet-switched network. *Spec.*, p. 4, ll. 9-13. As seen in Figures 3 and 4, for example, a communications network 100 configured according to one embodiment of the present invention comprises a circuit-switched network 120 interfaced with a packet-switched network 110. A mobile terminal 12 may register for services on both networks. A Broadcast Message Center 22 (BMC) in the circuit-switched network connects to the packet-switched network via an interworking function 102. *Spec.*, p. 12, ln. 12 – p. 13, ln. 13; Figure 3. The interworking function includes a formatter 104 (see Figure 5) that formats broadcast teleservice messages received by the BMC from a circuit-switched protocol to a packet-switched protocol for delivery to the mobile terminal camped on the PCCCH. *Spec.*, p. 14, ln. 12 – p. 15, ln. 2; Figure 5.

According to one embodiment, the BMC generates a broadcast teleservice message and transmits the message to mobile terminals having service with the circuit-switched network. Because the message is delivered to the mobile terminals over the circuit-switched network, the message is formatted according to a circuit-switched protocol. However, as stated above, mobile terminals camped on the PCCCH cannot receive these messages. Therefore, the formatter translates the broadcast teleservice message to a packet-switched protocol and transmits the translated broadcast service message to the mobile terminals in the packet-switched network.

**(VI.) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 1, 3-11, 13, and 16-23 stand finally rejected under 35 U.S.C. §103(a) as being unpatentable over the article to Faccin et. al., entitled “GPRS and IS-136 Integration for Flexible Network and Service Evolution” (hereinafter “Faccin”) in view of the patent to Daly et. al. (U.S. Patent No. 6,393,014, hereinafter “Daly”).

**(VII.) ARGUMENT**

**A. Brief summaries of the Faccin and Daly references.**

The article to Faccin provides an overview that generally describes the integration of a General Packet Radio Service (GPRS) packet-switched network and an IS-136 circuit-switched network. Faccin generally describes the architecture of a GPRS-136 network (*Faccin*, p. 51), the types of services available in a GPRS-136 network (*Faccin*, p. 53), and the future evolution of the GPRS-136 network (*Faccin*, p. 53). Within the context of the network architecture, Faccin further discloses mobility management and the delivery of signaling and data messages to a mobile terminal (*Faccin*, pp. 51-53). Faccin does not broach the subject of broadcast teleservices or disclose how to deliver broadcast teleservices across GPRS-136 networks. Faccin certainly never suggests an interworking function connected to the teleservice center that translates a message formatted according to a circuit-switched protocol to a packet-switched protocol for delivery to a mobile station camped on the PCCCH.

Daly also discloses an integrated circuit-switched/packet-switched network in which a mobile terminal sends and receives data packets over the packet-switched network, and voice over the circuit-switched network. *Daly*, col. 3, ll. 10-35. Daly further discusses how to deliver a point-to-point message originating in the packet-switched network to a mobile station camped in the circuit-switched network. Specifically, Daly discloses sending a data message originating in the packet-switched network to a teleservice center in the circuit-switched network. The teleservice center then encapsulates the data message inside an R-DATA teleservice message,

and delivers the message to the mobile station in the circuit-switched network via a Mobile Switching Center (MSC) and a Base Station (BS). *Daly*, col. 4, ln. 44 – col. 5, ln. 11. *Daly* does not teach or suggest an interworking function connected to the teleservice center that translates a message formatted according to a circuit-switched protocol to a packet-switched protocol for delivery to a mobile station camped on the PCCCH.

**B. Faccin and Daly, alone or in combination, fail to render claim 1 obvious.**

Claim 1 is directed to a communications network comprising a circuit-switched network, a BMC connected to the circuit-switched network, and a packet-switched network. An interworking function connects the BMC to the packet-switched network. The interworking function connects to the BMC and formats broadcast teleservice messages from a first messaging protocol used in the circuit-switched network to a second messaging protocol used in the packet-switched network for delivery to mobile terminals camped on the packet-switched network. For convenience, claim 1 appears below.

1. A communications network comprising:
  - a circuit-switched network providing communications services to mobile terminals having service with said circuit-switched network;
  - a broadcast teleservice message center connected to said circuit-switched network to generate broadcast teleservice messages formatted according to a first messaging protocol for delivery to mobile terminals having service with said circuit-switched network;
  - a packet-switched network providing communication services to mobile terminals having service with said packet-switched network; and
  - an interworking function connecting said broadcast teleservice message center to said packet-switched network, said interworking function including a formatter to translate broadcast teleservice messages from the first messaging protocol used in the circuit-switched network into a second messaging protocol used in the packet-switched network for delivery over said packet-switched network to mobile terminals having service with said packet-switched network.

**1. Both Faccin and Daly explicitly teach “encapsulation,” not “translation.**

The Examiner maintained the §103(a) rejection of claim 1 over the article to Faccin in view of the patent to Daly. However, the §103 rejection fails because neither Faccin nor Daly

teach or suggest, alone or in combination, an internetworking function having a formatter that translates broadcast teleservice messages from a first protocol used in a circuit-switched network, to a second protocol used in the packet-switched network. Rather, both Faccin and Daly disclose sending messages across network platforms using a technique called “encapsulation.” “Translation” as required by claim 1 is different than “encapsulation” disclosed by the references.

Specifically, translating a message entails converting a file or data from one format into another format. This fact is supported by the definition of “translation” in the Wiley Electrical Electronics Engineering Dictionary (Exhibit 1). Notably, the underlying file or data is no longer readable in the original format after translation. In the context of claim 1, the formatter translates the broadcast teleservice message from a protocol used by the circuit-switched network into a protocol used by the packet-switched network. The broadcast teleservice message is no longer readable in the circuit-switched protocol after translation to the packet-switched protocol.

“Encapsulation,” in contrast, is “[a] technique which enables a network to send data utilizing one protocol, through another network using [a] different protocol. It does so by encapsulating packets using one network protocol within packets being transmitted through the other network. Also called **tunneling**.” (Exhibit 1) (first emphasis added)(second emphasis in original). The packets being transmitted through the other network are formatted according to the other network’s protocol; however, the encapsulated data payload within those packets remains formatted according to its original protocol. Thus, encapsulation does not alter the encapsulated data, and the encapsulated data is still readable in the original format upon receipt. Faccin and Daly both teach encapsulation to send messages between networks, not translation.

Faccin, for example, discloses how messages originating in a circuit-switched network are delivered to a mobile terminal camped in the packet-switched network. “The interaction

between the MS and the IS-41 [circuit-switched] network elements when the MS is obtaining service from the packet data network elements is achieved by the technique of *tunneling*.”

*Faccin*, p. 52, left column, ll. 2-5 (emphasis in original). By tunneling, Faccin means transmitting encapsulated packets of data between the GPRS and IS-136 networks. The Faccin article itself provides proof of this fact. Specifically, when a user wants to send or receive data, the user must activate a PDP context. A PDP context, according to Faccin, “is a two-way tunnel between the SGSN and the GGSN used to carry encapsulated user packets.” *Faccin*, pg. 50, right column, ll. 16-18 (emphasis added). Faccin further provides that “[a] Class B 136 MS interacts with an IS-136 MSC by tunneling IS-136 signaling messages transparently through the SGSN. The SGSN does not interpret the IS-136 messages flowing back and forth between the MS and the MSC.” *Faccin*, pg. 52, left column, ll. 6-10 (emphasis added). Indeed, the reason that the signaling messages are sent transparently through the SGSN is because they are not in a format readable by the SGSN. In other words, the signaling messages are encapsulated within other packets that *are* readable by the SGSN.

Daly also explicitly teaches encapsulation. Specifically, Daly discloses a situation where a mobile station is notified of a data message originating in the packet-switched network while the mobile station is camped on the control channel of the circuit-switched network. According to Daly, a teleservice server (TS) receives a request from the R-DATA message handler (RDMH) to deliver a message to the mobile station. Upon receipt, “[t]he teleservice server encapsulates the incoming data from the R-Data message handler into the appropriate GUTT format and packages it into an IS-41 SMDPP transport message.” *Daly*, col. 5, ll. 35-38 (emphasis added). The SMDPP transport message is then sent to the serving MSC, which verifies that the mobile station is registered on the circuit-switched network. Once the MSC receives a verification signal from the mobile station, “the MSC “encapsulates the GUTT message in an IS-136 R-Data message on the SPACH [for delivery to the mobile station].” *Daly*, col. 6, ll. 14-16 (emphasis added). It is clear from these passages above that whatever

Daly discloses, messages originating in the packet-switched network are encapsulated for delivery to the mobile station in the circuit-switched network.

Thus, both Faccin and Daly teach encapsulation, not translation. Further, the cited references' use of the term "encapsulation" is consistent with the meaning of that term understood by those of ordinary skill in the art. The definitions in Exhibit 1 evidence this fact. During prosecution, the Examiner refused to consider the dictionary meanings as proof of how those skilled in the art understand these terms. Rather, the Examiner dismissed this evidence out of hand and asserted that the definitions of the claim terms depend more heavily on intrinsic evidence than on extrinsic evidence. *See Advisory Action*, p. 2. However, this assertion is based on a misinterpretation of the court's holding in *Phillips v. AWH Corp.*, 75 USPQ2d, 1329 (Fed. Cir. 2005).

In *Phillips*, the court simply held that intrinsic evidence (i.e., that evidence found in the specification) is more reliable in determining how to interpret the claims than extrinsic evidence in a litigation context. The court did not hold that extrinsic evidence could or should be dismissed altogether during prosecution to establish the ordinary meaning. The *Phillips* court held:

Within the class of extrinsic evidence, the court has observed that dictionaries ... can be useful in claim construction. ... We have especially noted the help that technical dictionaries may provide to a court 'to better understand the underlying technology' and the way one of skill in the art might use the claim terms. ... Because dictionaries, and especially technical dictionaries, endeavor to collect the accepted meanings of terms used in the various fields of science and technology, those resources have been properly recognized as among the many tools that can assist the court in determining the meaning of particular terminology to those of skill in the art of the invention. ... Such evidence, we have held, may be considered if the court deems it helpful in determining 'the true meaning of language used in the patent claims.'"

*Id.* at 1330. (emphasis added) (citations omitted). In electing to dismiss the evidence, the Examiner simply subjected the terms to whatever meaning the Examiner chose to assign. However, this constitutes incorrect claim interpretation as a matter of law.



When construing claims, the Examiner must indulge “a ‘heavy presumption’ that a claim term carries its ordinary and customary meaning.” *Teleflex Inc. v. Ficosa North America Corp.*, 63 USPQ2d, 1374, 1380 (Fed. Cir. 2002). The presumption governs unless the patentee provides intrinsic evidence otherwise.

We hold that claim terms take on their ordinary and accustomed meanings unless the patentee demonstrated an intent to deviate from the ordinary and customary meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.

*Id.* at 1382. In this case, Applicants have provided technical definitions to evidence how those of ordinary skill of the art understand the terms “encapsulation” and “translation.” As stated above and as evidenced by the enclosed Exhibit, those meanings are not the same. Moreover, the specification does not include any language that would lead one skilled in the art to conclude that the term “translation” means anything other than its ordinary meaning.

Therefore, the references do not teach or suggest, alone or in combination, translation. Rather, they explicitly teach encapsulation. The Examiner has erred in construing the claims, and thus, the §103 rejection should be withdrawn.

## **2. Neither Faccin nor Daly teach or suggest the claimed interworking function.**

Notwithstanding the above, the §103 rejection of claim 1 also fails for another reason. Particularly, neither Faccin nor Daly teach or suggest, alone or in combination, the claimed interworking function. The interworking function of claim 1 connects to the BMC and translates broadcast teleservice messages from a first messaging protocol used in the circuit-switched network to a second messaging protocol used in the packet-switched network for delivery to mobile terminals camped on the packet-switched network.

The Examiner asserts that the section of Faccin entitled “The GPRS System” discloses converting media between different protocols, and that the Short Message Service-Interworking Mobile Switching Center (SMS-IWMSC) is the claimed interworking function having a formatter.

The Examiner theorizes that because two different networks must have two different protocols, it would be obvious to have “an appropriate protocol in order to transport [the messages] over the corresponding network. *Final Office Action*, p. 3, ¶12. The Examiner then asserts that the SMS-IW MSC is the entity that performs the alleged conversion. Scrutiny, however, reveals otherwise.

The section cited by the Examiner simply describes some of the entities and their functionality within a GPRS packet data network in general terms. It says nothing, however, about an SMS-IW MSC or its functionality. Faccin describes the exact method by which paging messages are sent to the mobile station in an integrated GPRS-136 network in a later section entitled “Tunneling of Signalling Messages.” *Faccin*, pp. 52-53. According to this section, the paging messages are tunneled through the SGSN. The SGSN simply provides a transport service for tunneled signaling messages (i.e., paging messages), without interpreting or altering the payload. *Faccin*, p. 52, right column, ln. 26 – p. 53, left column, ln. 2; *see also Faccin*, p. 52, left column, ll. 2-13. Therefore, the cited section does not support the Examiner’s assertion. Moreover, neither does the remainder of the Faccin article.

Applicants have read the Faccin reference, but are unable to find any language that supports the Examiner’s position. Faccin does show an SMS-IW MSC in some of the figures (e.g., figure 5), but neglects to ever mention its use or function within the network. Faccin certainly does not teach or suggest that the SMS-IW MSC translates broadcast teleservice messages from a circuit-switched protocol into a packet-switched protocol. This is because SMS-IW MSCs are special entities within the network that perform a well-known function different from the one the Examiner contends it performs.

An SMS-IW MSC is a type of mobile switching center (MSC). MSCs are responsible for routing calls to and from the mobile terminals through appropriate base stations and coordinating handoffs as the mobile terminal moves between cells in the network. *Spec.*, p. 6, ll. 3-13. SMS-IW MSCs are selected MSCs that perform additional functionality. Specifically,

they interface a Public Land Mobile Network (PLMN) to a Short Message Center (SC), and facilitate the transmission of point-to-point messages from the mobile terminals to the SC. Faccin does not discuss the SMS-IW MSC or its functionality within the network. Therefore, it cannot support an assertion that it performs any function other than what those skilled in the art understand it to perform.

Simply put, Faccin does not teach or suggest that the SMS-IW MSC translates broadcast teleservice messages from a circuit-switched protocol into a packet-switched protocol. Indeed, the Examiner's assertion is conclusory and unsubstantiated by the Faccin reference. Conclusory, unsubstantiated assertions can never support a legally sufficient §103 rejection.

Daly does disclose a teleservice center and an MSC that performs an interworking function. However, neither entity translates broadcast teleservice messages from a circuit-switched protocol into a packet-switched protocol. As explicitly recited in Daly, the MSC performs the interworking function "from the IS-41 SMDPP to the IS-136 R-Data over-the-air interface." Daly, col. 5, ll. 44-45. As is well known in the art, IS-41 is the interoperability standard that defines how entities communicate within the fixed part of the circuit-switched network (e.g., MSC - BS). IS-136 is the standard that defines the air interface between the mobile station and the fixed part of the circuit-switched network (i.e., MS-BS). Thus, all Daly discloses regarding the interworking function is that messages are sent from the fixed part of a circuit-switched network to the mobile station over the air interface. The MSC performing the interworking function does not translate messages from a circuit-switched protocol to a packet-switched protocol, and Daly never suggests that it does.

Because neither Faccin nor Daly teach or suggest translating broadcast service messages from a first protocol used in a circuit-switched network to a second protocol used in the packet-switched network, the §103 rejection fails.

**3. There is no motivation to combine Faccin and Daly.**

In addition to those reasons above, there is no motivation to combine Faccin and Daly. Daly provides a method to deliver packet data messages to a mobile station in a circuit-switched network. Notably, using a teleservice center to deliver messages to a mobile station in the circuit-switched network is known. Teleservice centers are already part of circuit-switched networks, and thus, the teleservice center of Daly does nothing out of the ordinary. The primary reference Faccin provides nothing more than a general overview of the type of system already disclosed by Daly. Therefore, Faccin discloses nothing more than what Daly assumes exists and combining the two provides only the system of Daly. As stated above, Daly does not teach or suggest each and every element of claim 1 and the Examiner never asserts otherwise.

Nevertheless, the Examiner reasons that it would have been obvious to combine the references to be able to transport teleservices from the Internet to a mobile station camped in a non-IP network. Even if this assertion were true, it has nothing to do with claim 1. Specifically, claim 1 translates broadcast teleservice messages (i.e., point-to-multipoint messages) from a circuit-switched protocol to a packet-switched protocol for delivery to a mobile station camped in the packet-switched network. The Daly reference delivers its encapsulated point-to-point messages in the opposite direction (i.e., to the circuit-switched network). Thus, even when combined the references do not produce the claimed invention.

The Examiner's position appears to be that since Faccin discloses integrated networks and Daly discloses teleservice centers and an interworking function, and because both disclose transporting messages across integrated networks, it would have been obvious to combine the two. However, the simple fact that integrated networks, teleservice centers, and interworking functions are known does not mean that there is any suggestion to combine. It means only that these entities exist. The mere identification of the combination of parts in a plurality of references, by itself, does not render Applicant's invention obvious. If it were, then many

inventions could instantly be rendered obvious, effectively eviscerating 35 U.S.C. §103 as well as the most of the body of case law that interprets it.

As this court has stated, 'virtually all [inventions] are combinations of old elements.' ... Therefore, an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be 'an illogical and inappropriate process by which to determine patentability' (citations omitted).

*In re Rouffet*, 149 F3d 1350, 47 U.S.P.Q.2d 1453 (Fed. Cir. 1998).

Motivation, as articulated by the Federal Circuit, requires that there be some desirability or advantage gained in making the combination, and further, that desirability or advantage must be apparent to one skilled in the art. In this case, the references fail to provide the motivation to combine. Therefore, for at least these reasons, neither Faccin nor Daly teach or suggest, alone or in combination, claim 1. As such, the §103 rejection fails as a matter of law.

**C. Faccin and Daly, alone or in combination, fail to render claim 10 obvious.**

The Examiner also rejected claim 10 under 35 U.S.C. §103(a) as being unpatentable over Faccin in view of Daly for substantially the same reasons as those stated above. Claim 10 is a method claim directed to delivering broadcast messages to mobile terminals camped on the packet-switched network. Claim 10 calls out translating the broadcast teleservice messages from a first messaging protocol used in the circuit-switched network to a second messaging protocol used in the packet-switched network. In addition, claim 10 recites transmitting the broadcast teleservice messages formatted according to the second protocol over the packet-switched network to the mobile station. For the Board's convenience, claim 10 appears below in its entirety.

10. A method for delivering broadcast teleservice messages to mobile terminals over a communications network comprising:

- generating a broadcast teleservice message formatted according to a first messaging protocol in a broadcast teleservice message center;
- transmitting said broadcast teleservice message formatted according to said first messaging protocol over a circuit-switched network to one or more mobile terminals having service with said circuit-switched network;
- translating said broadcast teleservice message from the first messaging protocol used in the circuit-switched network into a second messaging protocol used in a packet-switched network;
- transmitting said broadcast teleservice message formatted according to said second messaging protocol from said broadcast teleservice message center to said packet-switched network; and
- transmitting said broadcast teleservice message formatted according to said second messaging protocol over said packet-switched network to one or more mobile terminals having service in said packet-switched network.

For the reasons stated above, neither Faccin nor Daly teaches or suggests, alone or in combination, claim 10. This is because both references fail to teach or suggest translation of broadcast teleservice messages from a first messaging protocol used in the circuit-switched network to a second messaging protocol used in the packet-switched network.

Further, because both cited references employ encapsulation and tunneling procedures, neither teaches nor suggests transmitting the broadcast teleservice messages formatted according to the second (packet-switched) protocol to the mobile stations. Both Faccin and Daly encapsulate their payload data to transport them across the network. Encapsulation does not alter the payload format, and thus, the payloads are transmitted across the network according to their original protocol. Because the messages of both Faccin and Daly are still readable in their original format upon receipt, both necessarily fail to teach or suggest transmitting messages formatted according to the second (packet-switched) protocol.

Accordingly, for the reasons stated above with respect to claim 1 and for the additional reason, Faccin and Daly do not teach or suggest, alone or in combination, claim 10. As such, the §103 rejection of claim 10 fails as a matter of law.

**D. Faccin and Daly, alone or in combination, fail to render claim 16 obvious.**

The Examiner also rejected claim 16 under 35 U.S.C. §103(a) as being unpatentable over Faccin in view of Daly. Claim 16 is directed to an interworking function that connects a BMC to a packet-switched network. The interworking function includes a formatter, a first interface that connects the interworking function to the BMC in the circuit-switched network, and a second interface that connects the interworking function to the packet-switched network. The formatter translates broadcast teleservice messages from a first messaging protocol used by the circuit-switched network (where the BMC resides) into a second messaging protocol used by the packet-switched network (where the mobile station is camped). Once translated, the interworking function transmits this translated message to the packet-switched network for delivery to a mobile station. For the Board's convenience, claim 16 appears below in its entirety.

16. An interworking function connecting a broadcast teleservice message center to a packet-switched network, said interworking comprising:
- a first interface connecting said interworking function to said broadcast message center, wherein said interworking function receives broadcast teleservice messages formatted according to a first messaging protocol over said first interface;
  - a formatter to translate said broadcast teleservice messages received over said first interface from said first messaging protocol into a second messaging protocol for delivery to mobile terminals having service with a packet-switched network; and
  - a second interface connecting said interworking function to said packet-switched network, wherein said interworking function transmits said broadcast teleservice messages formatted according to said second messaging protocol to said packet switched network over said second interface.

For reasons similar to those stated above, neither Faccin nor Daly teaches or suggests, alone or in combination, a formatter that translates broadcast teleservice messages from a first messaging protocol used by the circuit-switched network into a second messaging protocol used by the packet-switched network for delivery to mobile terminals in the packet-switched

network. Therefore, for at least those reasons stated above, the §103 rejection of claim 16 fails. Additionally, however, the §103 rejection of claim 16 fails for another reason.

Particularly, the Examiner notes that Faccin discloses an SMS-IW MSC and asserts that this entity is the claimed interworking function. However, the Faccin reference does not discuss the function of this entity, and therefore, the Examiner's assertion is unsupported. Faccin does not teach or suggest that the SMS-IW MSC includes a formatter that translates broadcast teleservice messages from a first messaging protocol used in the circuit-switched network to a second messaging protocol used in the packet-switched network. Indeed, SMS-IW MSCs have nothing to do with translating broadcast teleservice messages (i.e., point-to-multipoint messages) from a circuit-switched protocol to a packet-switched protocol. As previously stated, they perform a different function altogether.

Daly discloses that the MSC performs an interworking function, but does nothing to remedy the deficiencies of Faccin. As stated above, all Daly discloses with respect to the interworking function is that messages are sent from the fixed part of a circuit-switched network (IS-41) to the mobile station over the air interface (IS-136). The MSC performing the interworking function does not translate broadcast teleservice messages from a circuit-switched protocol to a packet-switched protocol. Instead, the interworking function in Daly receives SMS messages from the circuit-switched network, and transmits the SMS messages over the air interface in the circuit-switched network. The Daly interworking function does not transmit data between a circuit-switched network and a packet-switched network.

Accordingly, neither Faccin nor Daly teaches or suggests, alone or in combination, claim 16 for at least these reasons. As such, the §103 rejection of claim 16 fails as a matter of law.



**E. Faccin and Daly, alone or in combination, fail to render claim 21 obvious.**

The Examiner also rejected claim 21 under 35 U.S.C. §103(a) as being unpatentable over Faccin in view of Daly. Claim 21 is directed to a BMC having an interworking function. The interworking function includes a protocol converter that translates broadcast teleservice messages transmitted over a first interface (i.e., from the circuit-switched network) from a first messaging protocol into a second messaging protocol for delivery to mobile terminals having service with a packet-switched network. For the Board's convenience, claim 21 appears below in its entirety.

21. A broadcast message center in a mobile communication network generating broadcast teleservice messages, said broadcast message center comprising:  
a broadcast message application generating said broadcast teleservice messages;  
a first interface connecting said broadcast message center to a circuit switched network, wherein said broadcast teleservice messages transmitted over said first interface are formatted according to a first messaging protocol;  
an interworking function including a protocol converter to translate said broadcast teleservice messages transmitted over said first interface from said first messaging protocol into a second messaging protocol for delivery to mobile terminals having service with a packet-switched network; and  
a second interface connecting said interworking function to said packet-switched network, wherein said interworking function transmits said broadcast teleservice messages formatted according to said second messaging protocol to said packet switched network over said second interface.

For reasons similar to those stated above, neither Faccin nor Daly teaches or suggests, alone or in combination, an interworking function including a protocol converter that translates broadcast teleservice messages from a first messaging protocol used by the circuit-switched network into a second messaging protocol used by the packet-switched network for delivery to mobile terminals in the packet-switched network. Therefore, for at least those reasons stated above, the §103 rejection of claim 21 fails. In addition, however, the §103 rejection of claim 21 also fails because neither Faccin nor Daly teaches or suggests, alone or in combination, a BMC that includes the claimed interworking function.

In this rejection, the Examiner appears to assert that the SMS-IWMSC of Faccin is the BMC of claim 21. However, this assertion is unsupported by the Faccin article and by what is known in the art. A BMC and an SMS-IWMSC are two different entities within a network that perform two different functions. A BMC provides broadcast teleservices to mobile terminal users. The BMC determines the content of broadcast teleservice messages, how frequently broadcast teleservice messages are broadcast, and what channels to use for broadcast teleservice messages. In claim 21, the BMC also comprises the interworking function and provides the content of, and instructions for, broadcasting teleservice messages to the MSC. *Spec.*, p. 6, ll. 14-20.

Simply put, SMS-IWMSCs are not BMCs. Each performs a different function within the network. Faccin does not suggest that these two elements are the same, nor does Faccin suggest that these elements perform the same function. Certainly, Faccin does not teach or suggest that the SMS-IWMSC includes an interworking function having a protocol converter that translates broadcast teleservice messages (i.e., point-to-multipoint messages) from a first messaging protocol used by a circuit-switched network into a second messaging protocol used by a packet-switched network for delivery to mobile terminals in the packet-switched network.

Further, while Daly does disclose a teleservice center, Daly does not teach or suggest that it includes the claimed interworking function. As previously stated, the only interworking function disclosed by Daly resides with the MSC (which, as stated above, is not a BMC). The Daly interworking function simply interfaces the IS-41 part of the circuit-switched network with the IS-136 air interface part of the circuit-switched network. Daly, like Faccin, does not teach or suggest that the disclosed interworking function translates broadcast teleservice messages from a first messaging protocol used by a circuit-switched network into a second messaging protocol used by a packet-switched network for delivery to mobile terminals in the packet-switched network.

Therefore, neither Faccin nor Daly teaches or suggests, alone or in combination, claim 21 for this additional reason. As such, the §103 rejection of claim 21 fails as a matter of law.

**F. Faccin and Daly, alone or in combination, fail to render claim 5 obvious.**

In addition to the independent claims, there are several dependent claims worthy of specific mention. Particularly, the Examiner rejected claim 4 under 35 U.S.C. §103 as being obvious over Faccin and Daly. Claim 5 depends indirectly from claim 5 and further recites that the interworking function interfaces with a point-to-multipoint service center within the packet-switched network over a first interface. For the Board's convenience, claim 5 and its intervening claims 3 and 4 appear below.

3. The communications network of claim 1 wherein said packet-switched network implements the General Packet Radio Service.

4. The communications network according to claim 3 wherein said packet-switched network comprises a point-to-multipoint service center providing point-to-multipoint services.

5. The communications network according to claim 4 wherein said interworking function interfaces with said point-to-multipoint service center over a first interface.

Claim 5 depends from claim 1, and thus, is patentable over the cited art for the reasons stated above with respect to claim 1. Additionally, however, neither cited reference teaches or suggests, alone or in combination, an interworking function (that translates broadcast service messages from a first circuit-switched messaging protocol to a second packet-switched messaging protocol) that interfaces with a point-to-multipoint service center in the packet-switched network.

The Examiner asserts that the different interfaces shown by Faccin render claim 5 obvious. *Final Office Action*, p. 6, ¶2. As stated above, the Faccin reference provides a general overview of an integrated GPRS-136 system. Thus, it is not surprising that Faccin indicates the interfaces between multiple entities. However, simply because these interfaces exist does not mean that Faccin teaches or suggests that an interworking function (that translates broadcast

service messages from a first circuit-switched messaging protocol to a second packet-switched messaging protocol) interfaces with a point-to-multipoint service center in the packet-switched network. Indeed, the only mention Faccin makes of point-to-multipoint services is a general statement that GPRS networks support such services. *Faccin*, p. 53, right column, ll. 7-9. Faccin does not teach or suggest the claimed interworking function, and therefore, cannot possibly teach or suggest that the interworking function interfaces with a point-to-multipoint service center located in the packet-switched network.

The Examiner does not mention Daly specifically in the rejection to claim 5. This is because Daly is concerned only with point-to-point communications between a mobile station and the network. Thus, Daly does not even relate to the point-to-multipoint communications method addressed by the claimed invention. Therefore, Faccin and Daly also fail to teach or suggest, alone or in combination, claim 5.

**G. Faccin and Daly, alone or in combination, fail to render claim 11 obvious.**

The Examiner also rejected claim 11 under 35 U.S.C. §103 as being obvious over Faccin and Daly. Claim 11 depends directly from claim 10 and further defines the transmitting step of claim 10 to comprise transmitting the broadcast teleservice message formatted according to the second messaging protocol to a point-to-multipoint service center in the packet-switched network. For the Board's convenience, claim 11 appears below.

11. The method of claim 10 wherein transmitting said broadcast teleservice message formatted according to said second messaging protocol from said broadcast teleservice message center to said packet-switched network comprises transmitting said broadcast teleservice message formatted according to said second messaging protocol to a point-to-multipoint service center in said packet-switched network.

As stated above, Faccin merely discloses that GPRS networks support point-to-multipoint service without ever going into any detail as to how that is accomplished. Daly is directed to point-to-point messaging. Neither reference teaches or suggests, alone or in combination, that the transmitted broadcast teleservice message, which has been translated

from a first circuit-switched protocol to a second packet-switched protocol, is transmitted to a point-to-multipoint service center in the packet-switched network. Therefore, Faccin and Daly fail to teach or suggest, alone or in combination, claim 11.

**H. Faccin and Daly, alone or in combination, fail to render claim 18 obvious.**

The Examiner also rejected claim 18 under 35 U.S.C. §103 as being obvious over Faccin and Daly. Claim 18 depends indirectly from claim 16 and further requires the interworking function to interface with a point-to-multipoint service center over a first interface. For the Board's convenience, claim 18 and its intervening claim 17 appear below.

17. The interworking function according to claim 16 wherein said first interface connects to a mobile switching center node in a circuit-switched network.

18. The interworking function according to claim 17 wherein said interworking function interfaces with said point-to-multipoint service center over a first interface.

For reasons similar to those stated above, neither reference teaches or suggests, alone or in combination, that the interworking function of claim 18 interfaces with a point-to-multipoint service center. As stated above, Faccin discloses only that GPRS networks support point-to-multipoint service. Daly discloses point-to-point messaging. Therefore, Faccin and Daly fail to teach or suggest, alone or in combination, claim 18.

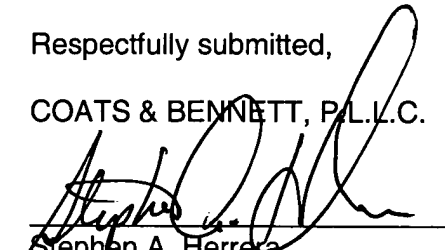
**I. Conclusion.**

For the reasons set forth above, none of the references, alone or in combination, teach or suggest any of pending claims 1, 3-11, 13, and 16-23. Moreover, the alleged motivation to combine the references is conclusory and unsupported by the cited references, and as such, falls far short of the *legally sufficient* motivation required under the law. Accordingly, all pending claims 1, 3-11, 13, and 16-23 being appealed herein are patentable over the cited art.

Applicants respectfully requests the Board to overturn the §103 rejections to all pending claims.

Respectfully submitted,

COATS & BENNETT, P.L.L.C.

  
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Stephen A. Herrera  
Registration No.: 47,642

Dated: January 30, 2006

P.O. Box 5  
Raleigh, NC 27602  
Telephone: (919) 854-1844  
Facsimile: (919) 854-2084

**(VIII.) CLAIMS APPENDIX**

1. A communications network comprising:

a circuit-switched network providing communications services to mobile terminals having service with said circuit-switched network;

a broadcast teleservice message center connected to said circuit-switched network to generate broadcast teleservice messages formatted according to a first messaging protocol for delivery to mobile terminals having service with said circuit-switched network;

a packet-switched network providing communication services to mobile terminals having service with said packet-switched network; and

an interworking function connecting said broadcast teleservice message center to said packet-switched network, said interworking function including a formatter to translate broadcast teleservice messages from the first messaging protocol used in the circuit-switched network into a second messaging protocol used in the packet-switched network for delivery over said packet-switched network to mobile terminals having service with said packet-switched network.

2. The communications network of claim 1 wherein said first messaging protocol is the Broadcast Air-Interface Transport Protocol and said second messaging protocol is the Multicast Service Access Protocol.

3. The communications network of claim 1 wherein said packet-switched network implements the General Packet Radio Service.

4. The communications network according to claim 3 wherein said packet-switched network comprises a point-to-multipoint service center providing point-to-multipoint services.

5. The communications network according to claim 4 wherein said interworking function interfaces with said point-to-multipoint service center over a first interface.

6. The communications network of claim 5 wherein said first interface is a Gm interface.

7. The communications network of claim 1 wherein said packet-switched network comprises a serving GPRS support node.

8. The communications network according to claim 7 wherein said interworking function connects to said serving GPRS support node via a second interface.

9. The communications network according to claim 8 wherein said second interface is a Gn interface.



10. A method for delivering broadcast teleservice messages to mobile terminals over a communications network comprising:

generating a broadcast teleservice message formatted according to a first messaging protocol in a broadcast teleservice message center;

transmitting said broadcast teleservice message formatted according to said first messaging protocol over a circuit-switched network to one or more mobile terminals having service with said circuit-switched network;

translating said broadcast teleservice message from the first messaging protocol used in the circuit-switched network into a second messaging protocol used in a packet-switched network;

transmitting said broadcast teleservice message formatted according to said second messaging protocol from said broadcast teleservice message center to said packet-switched network; and

transmitting said broadcast teleservice message formatted according to said second messaging protocol over said packet-switched network to one or more mobile terminals having service in said packet-switched network.

11. The method of claim 10 wherein transmitting said broadcast teleservice message formatted according to said second messaging protocol from said broadcast teleservice message center to said packet-switched network comprises transmitting said broadcast teleservice message formatted according to said second messaging protocol to a point-to-multipoint service center in said packet-switched network.

12. The method of claim 10 further comprising sending a change notification message from said circuit-switched network to said mobile terminals, said change notification message indicating changes in a broadcast channel.

13. The method of claim 10 wherein transmitting said broadcast teleservice message formatted according to said second messaging protocol from said broadcast teleservice message center to said packet-switched network comprises transmitting said broadcast teleservice message formatted according to said second messaging protocol to a serving GPRS support node in said packet-switched network over a second interface.

14. A method for delivering subchannel data transmitted over a circuit-switched network to a mobile terminal having service with a packet-switched network, said method comprising:

assigning a group identification number to a service provider for said circuit-switched network;

assigning one or more group identification numbers to sub-channels used by said service provider to transmit sub-channel data;

transmitting said one or more group identification numbers assigned to said sub-channels to mobile terminals registered with said packet-switched network in a first broadcast teleservice message having a group identification field and a data field, said one or more group identification numbers assigned to said sub-channels being contained in said first broadcast teleservice message data field, and said group identification number for said corresponding service provider being contained in said first broadcast teleservice message group identification field; and

transmitting sub-channel data to mobile terminals registered in said packet-switched network in a second broadcast teleservice message having a group identification field and a data field, said second broadcast teleservice message group identification field containing a group identification for a selected sub-channel to identify the sub-channel and said second broadcast teleservice message group data field containing said sub-channel data.

15. The method of claim 14 wherein said sub-channel data comprises an Intelligent Roaming Database download message.

16. An interworking function connecting a broadcast teleservice message center to a packet-switched network, said interworking comprising:

a first interface connecting said interworking function to said broadcast message center,  
wherein said interworking function receives broadcast teleservice messages formatted  
according to a first messaging protocol over said first interface;  
a formatter to translate said broadcast teleservice messages received over said first  
interface from said first messaging protocol into a second messaging protocol for  
delivery to mobile terminals having service with a packet-switched network; and  
a second interface connecting said interworking function to said packet-switched network,  
wherein said interworking function transmits said broadcast teleservice messages  
formatted according to said second messaging protocol to said packet switched network  
over said second interface.

17. The interworking function according to claim 16 wherein said first interface  
connects to a mobile switching center node in a circuit-switched network.

18. The interworking function according to claim 17 wherein said interworking function interfaces  
with said point-to-multipoint service center over a first interface.

19. The interworking function according to claim 16 wherein said second interface  
connects to a serving GPRS support node in said packet-switched network.

20. The interworking function according to claim 19 wherein said second interface is a Gn interface.

21. A broadcast message center in a mobile communication network generating broadcast teleservice messages, said broadcast message center comprising:

a broadcast message application generating said broadcast teleservice messages;

a first interface connecting said broadcast message center to a circuit switched network,

wherein said broadcast teleservice messages transmitted over said first interface are

formatted according to a first messaging protocol;

an interworking function including a protocol converter to translate said broadcast

teleservice messages transmitted over said first interface from said first messaging

protocol into a second messaging protocol for delivery to mobile terminals having service

with a packet-switched network; and

a second interface connecting said interworking function to said packet-switched network,

wherein said interworking function transmits said broadcast teleservice messages

formatted according to said second messaging protocol to said packet switched network

over said second interface.

22. The broadcast message center according to claim 21 wherein said second

interface connects to a serving GPRS support node in said packet-switched network.

23. The broadcast message center according to claim 22 wherein said second

interface is a Gn interface.

**(IX.) EVIDENCE APPENDIX**

There is no further evidence being submitted with this Brief that is not already contained in the prosecution history.

**(X.) RELATED PROCEEDINGS APPENDIX**

There are no related proceedings to the best of Applicants' knowledge.